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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,891	07/23/2003	Masaomi Ebe	Q76448	6755

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SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,891

Applicant(s)

EBE, MASAOMI

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The Amendment, filed on June 8, 2005 has been entered and is acknowledged by the Examiner.

Cancellation of claims 2 and 3 has been entered.

The new drawing of Fig.6 has been entered and is approved by the examiner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,770,310 to Morimoto et al. and further in view of U.S. Patent 6,313,579 to Nakano et al.

Regarding claim 1 Morimoto discloses (Fig. 4 column 3 line62- column 4 line 15) a flat display device comprising two sheets of glass substrate 20, 21, a seal layer 27, an exhaust hole 26 and a seal plate (lid member) 28 wherein the peripheries of the two sheets of the substrates 20,21 are sealed with the seal layer 27 via a predetermined gap held there between and that the exhaust hole 26 is provided in the substrate 21 and the exhaust hole 26 is sealed tightly by the seal plate 28.

Morimoto fails to disclose explicitly that the seal plate formed of pressed frit.

Nakano in analogous art of sealing plasma display panel discloses (Fig. 2 column 3 lines 11-19, column 4 lines 1- 14) a seal bonding member 20 made of frit (crystalline glass powder of low melting point) into a predetermined shape is used to bond the chip tube 11 to the gas charging hole 9. Nakano further discloses the seal bonding member formed of pressed frit having coefficient of thermal expansion close to that of the glass substrate provides reliability of bonding.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the sealer and the glass seal plate of Morimoto by the seal plate (seal bonding member) made of pressed frit and having coefficient of thermal expansion close to that of the glass substrate as taught by Nakano. This configuration provides increased reliability of bonding between the substrate and the plate and provides simplified manufacturing of the display panel.

The recitations of 'seal plate prepared by press-molding and calcining the molded plate' and 'seal plate is sealed tightly by heat-securing' describe the method of forming the flat display panel and is not germane to the issue of patentability of the panel itself. Therefore these limitations have not been given patentable weight.

Regarding claim 5 Morimoto discloses the substrate made of glass and Nakano discloses (column 3 lines 16-19) the thermal expansion coefficient of the seal plate (seal bonding member) is 0.8 to 0.65 times the thermal expansion coefficient of the glass substrate. The reason for combining the arts as in claim 1 applies.

Regarding claim 6 Nakano discloses (Fig. 5) the thermal coefficient of the seal plate is of  $61 \text{ to } 83 \times 10^{-7} / ^\circ\text{C}$ , which is within the claimed range.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,770,310 to Morimoto et al., U.S. Patent 6,313,579 to Nakano et al. and further in view of U.S. Patent 6,827,623 to Nakatake et al.

Claim 4 differs from Morimoto and Nakano in that Morimoto and Nakano do not exemplify the seal plate formed of glass plate providing high infrared absorbency.

Nakatake in same field of endeavor discloses (column 15 lines 46-57) glass frit formed of a material having high infrared absorption rate so that the seal plate can be melted by infrared, thereby sealing the through hole.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the sealing plate of Morimoto and Nakano made of glass with high infrared absorbency as suggested by Nakatake for sealing the exhaust hole by melting the seal plate by infrared radiation.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,770,310 to Morimoto et al., U.S. Patent 6,313,579 to Nakano et al. and further in view of U.S. Patent 5,914,531 to Tsunoda et al.

Referring to claim 7 Morimoto and Nakano are silent about the outer surface of the seal plate covered with damp-proofing resin.

Tsunoda in the art of packaging semiconductor devices discloses (column 7 lines 29-49) the circuit board is sealed with resin and thus is greatly protected from moisture. This provides enhanced moisture-proof reliability of the device.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include resin covering the seal plate of Morimoto and Nakano as suggested by Tsunoda for enhancing moisture-proof reliability of the display device.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,797,780 to Peng and further in view of U.S. Patent 6,313,579 to Nakano et al.

Regarding claim 1 Peng discloses (Figs. 3,6 column 3 lines 30-45,55-60 column 4 lines 12-36) a flat panel display comprising two sheets of substrates 1a,1b, a seal layer 5(glass frit), an exhaust hole 9, a seal plate 17, wherein the peripheries of the two sheets of the substrates 1a,1b are sealed with the seal layer 5 via a predetermined gap held there between and that the exhaust hole 9 is provided in the back substrate 1b and the exhaust hole is sealed tightly by the seal plate 17.

Peng does not exemplify the seal plate formed of pressed frit.

Nakano in analogous art of sealing plasma display panel discloses (Fig. 2 column 3 lines 11-19, column 4 lines 1- 14) a seal bonding member 20 made of frit (crystalline glass powder of low melting point) into a predetermined shape is used to bond the chip tube 11 to the gas charging hole 9. Nakano further discloses the seal

bonding member having coefficient of thermal expansion close to that of the glass substrate provides reliability of bonding.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the seal plate of Peng by the seal plate (seal bonding member) made of pressed frit and having coefficient of thermal expansion close to that of the glass substrate as taught by Nakano. This configuration provides increased reliability of bonding between the substrate and the plate and provides simplified manufacturing of the display panel.

The recitations of 'seal plate prepared by press-molding and calcining the molded plate' and 'seal plate is sealed tightly by heat-securing' describe the method of forming the flat display panel and is not germane to the issue of patentability of the panel itself. Therefore these limitations have not been given patentable weight.

### ***Response to Arguments***

Applicant's arguments filed June 8, 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that Nakano fails to teach or suggest 'calcining the molded plate' the Examiner respectfully notes that this the claim limitation is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between

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the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Therefore, it is the position of the examiner that it would have been obvious to one of ordinary skill in the art that the flat display panel disclosed by Morimoto and Nakano is at least a fully functional equivalent to the Applicant's claimed invention as evidenced by the suggestion of all of the Applicant's claimed structural limitations.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,257,945 to Nakayama and U.S. Patent 6,873,389 to Ikeya et al. disclose sealing of flat display panels.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.R.

Sikha Roy  
Patent Examiner  
Art Unit 2879

*Karabi Guharay*

**KARABI GUHARAY  
PRIMARY EXAMINER**